

Special Issue

Mathematical Modelling, Analysis, and Optimization for Engineering and Mechanics, 2nd Edition

Message from the Guest Editors

Mathematical modeling, analysis, and further optimization aimed at understanding nonlinear phenomena are fundamentally present in nature and form the basis of science, engineering, and consequently, mechanics. They form the foundation of our understanding of all engineering applications and are thus present in the solutions/states of the dynamical modelling of mechanics. Through the theoretical application and numerical implementation of pioneering theoretical techniques such as Poincaré sections, weakly nonlinear analysis and perturbation methods, Floquet analysis and bifurcation theory within Euclidean or curvilinear space fixed-point/solutions and their stability can be identified, while transient solutions can be tracked. This offers the possibility to explicitly optimize mechanical states that both have engineering applications and present significant theoretical and simulative advances. As a follow-up to the [first edition](#), this Special Issue aims to publish original research papers and reviews on the latest advancements in modeling, analysis, and optimization for engineering and mechanics.

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About the Journal

Message from the Editor-in-Chief

The journal *Mathematics* publishes high-quality, refereed papers that treat both pure and applied mathematics. The journal highlights articles devoted to the mathematical treatment of questions arising in physics, chemistry, biology, statistics, finance, computer science, engineering and sociology, particularly those that stress analytical/algebraic aspects and novel problems and their solutions. One of the missions of the journal is to serve mathematicians and scientists through the prompt publication of significant advances in any branch of science and technology, and to provide a forum for the discussion of new scientific developments.

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